

PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No. : 09/778,558 Confirmation No.: 4395  
Applicant : Pang-Chia LU *et al.*  
Filed : February 7, 2001  
TC/A.U. : 1774  
Title: : "Porous Polyethylene Film With An Ink Jet-Printed Surface"  
Examiner : Tamra L. DICUS  
Docket No. : 10251  
Customer No. : 23455 Date: August 21, 2003

## MAIL STOP NON-FEE AMENDMENT

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

## RESPONSE UNDER 37 C.F.R. § 1.111

Sir:

Please consider the remarks below in response to the Office Action mailed May 21, 2003.

Claims 1-10 are all the claims pending in the application.

At Section No. 3 of the Action, Claims 1-5 and 9 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent Publication 2001/0016248 to Alderfer, *et al.* ("Alderfer") in view of U.S. Patent 6,379,780 to Laney, *et al.* ("Laney").

Applicants respectfully traverse.

Extruded film layer (a) and coating layer (b) of the presently claimed invention both are porous and have an open-cell structure with interconnecting voids to allow ink fluids to penetrate into the film and contribute to the dry-time (Applicants refer to the description at page 11, line 29 through page 12, line 2). The fact that coating layer (b) is a porous ink-receiving layer having an open-cell structure with interconnecting voids is an element of the present invention that cannot be overlooked.

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If a non-porous ink-receiving layer is coated on an open-cell porous HDPE film, the image densities are good, but the dry times are poor (Applicants refer to Controls 1 and 2 in the Table at page 18 of the specification). It is only possible to achieve the superior combination of good dry times and good image densities needed for photo-type images when a coating layer (b) that has an open-cell structure with interconnecting voids is coated on an extruded film layer (a) that has an open-cell structure with interconnecting voids (Applicants refer to Elements 1 and 2 in the Table at page 18). In other words, only the present invention discloses to those of ordinary skill in the art the unexpected advantage provided by employing an extruded film layer (a) and coating layer (b) both having an open-cell structure with interconnecting voids.

The combination of Alderfer and Laney does not disclose or even suggest the present invention. In fact, the remarks at Section No. 3 of the Action (spanning pages 2 and 3 of the Action) include no mention at all of a porous coating layer (b).

The only mention of the coating in the remarks appears in the first paragraph of Section No. 3, wherein it is asserted that "[t]he sheet has a coating on it and comprises calcium carbonate joined to at least one side of the microporous material at [003], [0022], [0024], and [0051]."

By "coating," the Examiner is referring to Alderfer's ink-receptive layer (b). Alderfer's ink-receptive layer (b), however, is not a porous ink-receiving layer having an open-cell structure with interconnecting voids. Alderfer's ink-receptive layer (b) does not comprise calcium carbonate. *clm does call for*

The reference to calcium carbonate noted by the Examiner at [0024] relates to Alderfer's microporous material (a), not its ink-receptive layer (b). Instead, Alderfer's ink-receptive layer (b), as carefully explained in detail at [003] and [0049] through [0075], comprises hydrated aluminum oxide and is not porous nor does it have an open-cell structure.

In short, the combination of Alderfer and Laney does not disclose or suggest a porous, ink-receiving layer (b) and thus does not disclose or suggest each and every element of the present invention. Furthermore, only the present invention discloses to those of ordinary skill in the art the unexpected advantage provided by employing an extruded film layer (a) and coating

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layer (b) both having an open-cell structure with interconnecting voids. Accordingly, Applicants respectfully request that the Examiner reconsider and withdraw this rejection.

At Section Nos. 4-8 of the Action, Claims 1-10 are rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent 6,087,079 to Newberry, *et al.* ("Newberry") in view of U.S. Patent 5,458,590 to Schleinz, *et al.* ("Schleinz") and Laney. In addition, it is unclear to Applicants whether the indication at Section No. 2 of the Action means that there is an additional rejection of Claims 1-9 that does not include Laney, or whether the Newberry/Schleinz rejection from Paper No. 9 has been superseded by the new rejection at Section Nos. 4-8. The remarks below are intended to address both rejections, to the extent that the earlier rejection has not been superseded.

Applicants respectfully traverse.

The first and foremost basis for the traversal is the fact that the claimed invention is directed to a film possessing the superior combination of an extruded film layer (a) and coating layer (b) both being porous and having an open-cell structure with interconnecting voids.

Applicants have discovered that a porous coating layer (b) that has interconnecting voids coated on an extruded film layer (a) provides a pathway for an ink to penetrate appreciably into the substrate, thus allowing the substrate to contribute to the dry time (*see*, the paragraph bridging pages 11 and 12 of the specification). Furthermore, the specification describes how the interconnecting voids in layer (b) may be obtained (*see*, page 12, lines 3-9). Still further, the specification includes data from comparative experimentation demonstrating the superior results achieved by employing a porous, ink-receiving coating layer (b) that has interconnecting voids versus a non-porous coating layer.

If a non-porous ink-receiving layer is coated on an open-cell porous HDPE film, the image densities are good, but the dry times are poor (Applicants refer to Controls 1 and 2 in the Table at page 18). It is only possible to achieve the superior combination of good dry times and good image densities needed for photo-type images when a porous coating layer (b) that has an open-cell structure with interconnecting voids is coated on a porous extruded film layer (a) that has an open-cell structure with interconnecting voids (Applicants refer to Elements 1 and 2 in the

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Table at page 18). The superior combination of drying time and cyan density achieved by films coated with a porous, ink-receiving coating layer (b) that has interconnecting voids is completely unexpected from Newberry and Schleinz. Laney does not cure this deficiency of the prior art.

It is well-settled that a *prima facie* case of obviousness may be rebutted by a showing of the unexpected results achieved by the claimed invention. If the Examiner remains unconvinced by the showing in the specification, and especially the Table at page 18 and the Examples spanning pages 13-18 of the specification, Applicants respectfully request some detail as to why the showing is allegedly deficient. It is noted that Applicants may compare the claimed invention with prior art that is more closely related to the invention than the prior art relied upon by the Examiner. In re Holladay, 199 USPQ 516 (CCPA 1978). In the present case, it is respectfully submitted that the comparative film structures in the specification are closer to the claimed invention (share more elements in common with the claimed invention) than any actual embodiment or working example disclosed in the cited art.

Applicants maintain that there is a second basis for traversal of this rejection.

Specifically, a proposed modification to the primary prior art reference is not permitted to destroy the teachings of the prior art. At the first full paragraph of page 4 of the Action, the Examiner asserts that it would have been obvious to modify Newberry to include open cells in voids.

Applicants respectfully disagree.

Newberry is more explicit than a simple statement that its "voids generally tend to be closed cells." Newberry specifically requires that there be "virtually no path open from one side of the voided-core to the other side through which gas or liquid can traverse." Column 4, lines 34-37. This is an essential element of Newberry's invention, and a proposed modification to Newberry cannot simply ignore and contravene this teaching. Any portion of a prior art reference that would lead away from the claimed invention is evidence of nonobviousness. *See, W.L. Gore & Assoc. v. Garlock, Inc.*, 220 USPQ 303 (Fed. Cir. 1983).

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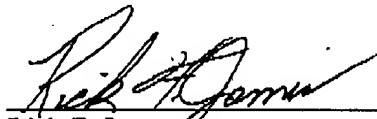
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For each of the foregoing reasons, Applicants respectfully request that the Examiner reconsider and withdraw the remaining §103 rejections.

Reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, she is kindly requested to contact the undersigned at the telephone number listed below.

Respectfully submitted,

Date: August 21, 2003

  
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